

# ASTHMA INSIGHTS & OUTCOMES

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## Helping Asthma Patients Kick the Habit

The first edition of the *Merck Manual*, published in 1899, recommended the use of tobacco to treat asthma. More than 100 years later, we are a bit more enlightened. We know smoking leads to severe asthma symptoms, an accelerated decline in lung function, and a greater likelihood of hospitalization. Also, smokers have an impaired response to inhaled corticosteroids, making asthma management more difficult.

Although more than 20 percent of people with asthma in many developed countries smoke, only a few studies have examined the impact of quitting smoking on asthma. Research to date shows that quitting improves cough, wheeze, and sputum production. Asthma symptoms may improve as soon as within a week after quitting. Sputum neutrophil counts fall and lung function improves significantly after six weeks, and bronchial hyperresponsiveness improves after four months.

The mainstays of smoking-cessation treatment are counseling and pharmacotherapy.

### COUNSELING

Counseling is proven effective therapy, particularly when focusing on skills training and problem solving. Social support, both as part of the treatment effort and outside of treatment, contributes significantly to success. In addition to individual and group counseling, free telephone quitlines are now widely available, and health care providers should encourage patients to use them. Research shows that the more intensive the counseling and social support provided, the greater the patient's chance of success. But providers should keep in mind that even brief counseling during office visits is effective.

Medicare Part B covers smoking-cessation counseling for patients with diseases or other health problems related to tobacco use. Brief counseling during office visits is included. For details, go to [www.cms.hhs.gov/MLNProducts/downloads/smoking.pdf](http://www.cms.hhs.gov/MLNProducts/downloads/smoking.pdf).

### PHARMACOTHERAPY

First-line agents for treating tobacco dependence are bupropion SR (Zyban) and nicotine patches, gum, inhalers, and nasal spray. Recommended second-line agents are clonidine and nortriptyline (off-label use).

Both bupropion and nicotine-replacement therapy (NRT) lead to higher quit rates than placebo. Bupropion should be

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## Undertreatment of Older Asthma Patients

Between 7 to 9 percent of older adults suffer from asthma—a slightly higher rate than is seen in the general population. While asthma-related deaths overall have remained about the same, they are increasing among the older population. Now, an evaluation of national health care data finds that seniors may not be receiving optimal asthma care.

The National Ambulatory Medical Care Survey data from 1998 to 2004 found that patients ages 65 and older were less likely than younger adults to be prescribed appropriate asthma medication (P. Navaratnam et al. *Journal of the American Geriatrics Society*, May 18, 2008). Only 4.2 percent of older asthma patients received controller medications (including inhaled corticosteroids, long-acting beta-agonists, and leukotriene modifiers), compared to 29.1 percent of the overall population, and only 4.3 percent received a short-acting beta-agonist, compared to 29.7 percent of the overall population.

The researchers suggest providers may be undertreating older patients due to concerns of aggravating comorbid conditions or because comorbid conditions confound the diagnosis of asthma. The National Heart, Lung, and Blood Institute offer asthma guidelines for treating older adults at [www.nhlbi.nih.gov/guidelines/asthma](http://www.nhlbi.nih.gov/guidelines/asthma).

## Are Asthma and Obesity Linked?

Along with the obesity epidemic has come a parallel increase in asthma. There's now considerable evidence indicating the two conditions are linked. These are some of the connections:

- **Obesity is a risk factor for the development of asthma.** Prospective studies have shown that obesity precedes asthma and that asthma incidence is about 50 percent higher in overweight and obese individuals than normal-weight individuals. This appears to be a dose-response relationship; asthma incidence is 38 percent higher in overweight individuals (those with a body mass index [BMI] of 25 to 29.9) and 92 percent higher in obese individuals (those with a BMI of 30 or higher).
- **There is evidence, although inconsistent, that asthma attacks are more severe and asthma control poorer in obese individuals.** A recent analysis of National Asthma Survey data found that obese individuals used more rescue medication, had more emergency and urgent care visits, missed more days of work, and were more likely to have severe persistent asthma than normal-weight individuals.
- **Asthma improves with weight loss.** Weight loss results in reduced use of asthma medication, fewer hospitalizations, and improvements in airflow and disease severity.

Several plausible mechanisms may explain these relationships:

- Obesity results in reduced chest-wall elasticity, lung volume, and tidal volume, as well as shortening and stiffening of the airways' smooth muscle, all of which contribute to airway hyperresponsiveness and narrowing.
- Asthma is an inflammatory disease, and the chronic low-grade inflammation that accompanies

obesity may exacerbate it. As BMI increases, inflammatory compounds, such as cytokines, chemokines, and other adipokines, increase. The greater oxidative stress seen in obesity may also contribute to asthma.

- Levels of hormones that regulate satiety and energy are changed in obesity. Serum leptin is higher in both obese patients and asthma patients. Produced by adipose tissue, leptin induces an inflammatory response. Conversely, levels of the insulin-sensitizing hormone adiponectin, which inhibits production of inflammatory compounds, are decreased in obese individuals. Administration of adiponectin to mice has been shown to reduce airway inflammation.
- Comorbidities of obesity, including gastroesophageal reflux disease, sleep-disordered breathing, and hypertension, also increase asthma risk and exacerbate existing asthma.

The additional asthma risk imposed by obesity provides yet one more reason why overweight individuals should be encouraged to lose weight.



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[www.surgeongeneral.gov](http://www.surgeongeneral.gov)

U.S. Department of Health and Human Services

[www.nhlbi.nih.gov](http://www.nhlbi.nih.gov)

National Heart, Lung, and Blood Institute

## ARTICLE SOURCES

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“Treating Tobacco Use and Dependence: 2008 Update—Clinical Practice Guideline.” U.S. Department of Health and Human Services, Public Health Service, May 2008, [www.surgeongeneral.gov/tobacco/treating\\_tobacco\\_use08.pdf](http://www.surgeongeneral.gov/tobacco/treating_tobacco_use08.pdf).

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## SELF-MONITORING Peak-Flow Monitoring vs. Symptom Awareness

What’s the best way for patients to monitor their asthma at home?

There’s no simple answer.

Peak-flow monitoring (PFM) provides objective information about lung function.

Yet there’s good evidence that asthma symptoms correlate poorly with underlying airflow obstruction. In addition, patients tend to underestimate their degree of airflow obstruction and rate their asthma as less severe than do health care providers using objective guidelines. These findings tend to support the use of PFM. Logically, one would expect it to have an advantage over symptom monitoring. But in the limited number of comparative studies done to date, patients using PFM weren’t consistently better at asthma self-management than patients who simply monitored their symptoms.

### INDIVIDUALIZE SELF-MONITORING

*The National Asthma Education and Prevention Program (NAEPP) Expert Panel Report 3 (2007)* states that PFM and symptom monitoring can work equally well and that there’s not enough evidence to warrant PFM for all patients. PFM certainly involves additional time, cost, and effort to implement. In deciding which method to use, consider these points:

- PFM is particularly helpful for patients who have difficulty perceiving the signs and symptoms of worsening airflow obstruction.

- Symptom monitoring is appropriate for those who can’t properly use a PFM device, such as preschool children and some older adults.
- Consider patient preferences—some patients simply prefer the more objective measurement of PFM.
- You should periodically review technique with patients using PFM and, if measurements don’t seem to agree with your clinical assessment of the patient, consider whether a new device is needed. Over time, PFM devices can become less accurate.

All asthma patients should have a written Action Plan, particularly those with moderate-to-severe asthma, a history of poorly controlled asthma, or severe exacerbations, outlining medication adjustments to make when either symptoms or PFM indicate a worsening of asthma.

### TUNING IN

According to the NAEPP, it’s especially important to ensure a patient is self-monitoring. Although the intensity and monitoring method are different among patients, self-monitoring helps all patients tune in to their disease. This supports effective self-management and fosters better communication between patients and health care providers, leading to better asthma management.

## Helping Asthma Patients Kick the Habit

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started at least two weeks prior to the quit date. Heavy smokers may need a nicotine patch plus another NRT product; this approach is safe and effective.

The U.S. Food and Drug Administration (FDA) approved varenicline (Chantix) for treatment of tobacco dependence in May 2006. By blocking nicotine sites in the brain, it eases withdrawal. In February 2008, the FDA warned of the possibility of severe changes in mood and behavior in patients receiving Chantix. Providers should be alert to and monitor patients for signs of depressed mood, anxiety, and suicidal ideation, which may occur during therapy or following its withdrawal.

To date, there is no evidence that hypnosis or acupuncture is effective for treating tobacco dependence. While either counseling or pharmacotherapy is effective alone, a combination of the two brings the highest quit rates. Encourage patients to use both when they attempt to quit.

### PRIMARY CARE APPROACHES

Every patient visit is an opportunity to address tobacco use. Research shows that providers are effective in helping patients quit smoking. U.S. Public Health Service recommends a five-step approach to addressing tobacco use in the next office visit:

- Ask about tobacco use at every visit.

- Advise all smokers to quit.
- Assess the patient's willingness to quit.
- Assist patients in efforts to quit.
- Arrange for follow-up contact.



### SMOKING-CESSATION RESOURCES

For additional details about smoking-cessation approaches, the U.S. Department of Health and Human Services' *Helping Smokers Quit—A Guide for Clinicians* and the detailed clinical practice guideline *Treating Tobacco Use and Dependence: 2008 Update—Clinical Practice Guideline* are available at [www.surgeongeneral.gov/tobacco](http://www.surgeongeneral.gov/tobacco).

The following resources are useful for patients:

- [www.smokefree.gov](http://www.smokefree.gov) (National Cancer Institute)
- [www.cancer.org](http://www.cancer.org) (American Cancer Society)
- [www.surgeongeneral.gov/tobacco](http://www.surgeongeneral.gov/tobacco) (Surgeon General)
- 877-44U-QUIT (National Cancer Institute)
- 800-QUIT-NOW (links to state-operated quitlines)
- [www.cancer.gov/help](http://www.cancer.gov/help) (Live Help Online Chat)

Talking with patients about smoking and showing them useful resources when they're ready to quit can make a real difference.